APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,706	04/04/2001	Yatin R. Acharya	95-391	1771

20736   7590   04/20/2005

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EXAMINER
KNOLL, CLIFFORD H

ART UNIT	PAPER NUMBER
2112	

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/824,706	ACHARYA ET AL.
	Examiner	Art Unit
	Clifford H. Knoll	2112

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _01 February 2005_.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-13_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-13_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _30 January 2004_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

This Office Action is responsive to communication filed 2/1/05. Currently claims

1-13 are pending.

The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

Claim Rejections - 35 USC § 103

1.   *Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over*

Fung (US 6243778) in view of common serial packet interface standards, as

evidenced by Aguilar (US 6199137).

Regarding claim 1, Fung discloses storing in a table at the end of each access

cycle by a retransmission manager entries identifying respective packets having been

transmitted during the corresponding access cycle according to a service protocol

requiring an acknowledgement receipt within a prescribed time interval (e.g., col.10,

lines 66-67), resetting an acknowledgement waiting bit for a selected one of the entries

by an acknowledgement manager (e.g., col.11, lines 9-12), and transferring the entries

having a determined absence of the reset stored acknowledgement waiting bit upon

expiration of the prescribed time interval to a transmit queue for retransmission (e.g.,

col.11, lines 4-5). Fung discloses the use of his system for serial packet protocols (e.g.,

col. 1, lines 48-50, 52-54, col. 3, lines 1-9, 15-29, claim 1) but fails to expressly mention

the Infiniband as a particular serial packet bus; however, the availability of Infiniband as

a serial bus is well established as, for example, evidenced by Aguilar, who discloses the

instance of Infiniband as a particular serial bus protocol. It would be obvious to combine

Infiniband protocol to Fung's serial packet protocol invention because of the clear

advantages of using a widely adopted serial packet bus interface standard in practicing

an invention directed to a serial packet bus interface. Therefore it would have been

obvious to one of ordinary skill in the art to combine the Infiniband protocol to Fung's

serial packet bus interface invention to obtain the claimed invention.

Regarding claim 2, Fung also discloses counting during each access cycle a

number of the packets having been transmitted during the corresponding access cycle

(col.11, lines 6-8).

Regarding claim 3, Fung further discloses accessing the entry for the first of the

packets transmitted during an access cycle having passed the expiration of the

prescribed time interval and determining whether the accessed entry includes a reset

acknowledgement waiting bit (e.g., col.11, lines 3-5).

Regarding claim 4, Fung still further discloses transferring the accessed entry

and selected subsequent entries based on the counted number stored in the accessed

entry to the transmit queue, independent of whether the selected subsequent entries

have respective reset acknowledgement waiting bits (e.g., col.11, lines 52-64).

Regarding claim 5, Fung still further discloses deleting entries having passed

beyond the expiration of the prescribed time interval (e.g., col.17, lines 41-50).

Regarding claim 6, Fung further discloses identifying entries for transfer based

on the counted number stored in the entry (e.g., col.11, lines 4-5).

Regarding claim 7, Fung also discloses wherein each access cycle is defined by a prescribed number of clock cycles (e.g., col.10, lines 66-67).

Regarding claim 8, Fung discloses a table configured for storing entries identifying respective packets having been transmitted according to a service protocol requiring an acknowledgement message receipt within a prescribed time interval and an acknowledgement waiting bit (e.g., col.11, lines 9-12), a transmit queue (e.g., col.10, lines 63-65), an acknowledgement manager configured for resetting the acknowledgement waiting bit for a selected one of the entries (e.g., col.11, lines 4-5), the retransmission manager configured for storing in the table at the end of each access cycle the entries identifying the respective packets having been transmitted during the corresponding access cycle, and transferring the entries having a determined absence of the reset acknowledgement bit upon expiration of the prescribed time interval from the table to the transmit queue (e.g., col.17, lines 41-50). Fung discloses the use of his system for serial packet protocols (e.g., col. 1, lines 48-50, 52-54, col. 3, lines 1-9, 15-29, claim 1) but fails to expressly mention the Infiniband as a particular serial packet bus; however, the availability of Infiniband as a serial bus is well established as, for example, evidenced by Aguilar, who discloses the instance of Infiniband as a particular serial bus protocol. It would be obvious to combine Infiniband protocol to Fung's serial packet protocol invention because of the clear advantages of using a widely adopted serial packet bus interface standard in practicing an invention directed to a serial packet bus interface. Therefore it would have been obvious to one of ordinary skill in the art to

combine the Infiniband protocol to Fung's serial packet bus interface invention to obtain the claimed invention.

Regarding claim 9, Fung also discloses comprising a counter configured for counting during each access cycle a number of the packets having been transmitted during the corresponding access cycle according to the service protocol (e.g., col.11, lines 4-5), inserting the counted number into a number of packets field within the entry corresponding to a first of the packets transmitted during the corresponding access cycle (e.g., col.11, lines 6-14).

Regarding claim 10, Fung also discloses accessing the entry for the first of the packets having been transmitted during an access cycle having passed the expiration of the prescribed interval, the retransmission manager transferring the accessed entry and selected subsequent entries based on the counted number stored in the accessed entry and identifying that the corresponding acknowledgement waiting bit has not been reset (e.g., col.11, lines 1-12).

Regarding claims 11 and 12, Fung also discloses the storing into the table after the defined prescribed number of clock cycles (e.g., col. 14, lines 35-39, "delay").

Regarding claim 13, Fung discloses the adapter integrated as an application specific integrated circuit (e.g., col. 10, lines 66-67).

Response to Arguments

Applicant's arguments filed 2/1/05 have been fully considered but they are not persuasive.

Applicant argues that Fung fails to disclose the "claimed storage of entries

identifying respective packets" (p. 8), and notes that Fung "stores TMC blocks on a per-

transaction basis, where each transaction may include a plurality of data packets" (p. 8).

However, this feature of Fung does not distinguish Fung from the claimed feature. The

TMC block has data entries and Fung uses these entries to identify respective packets;

this must clearly be the case because the Transaction Interface 210 which manages the

TMC blocks is responsible to break data specified by the TMC into several packets

when it initiates a transaction. As the Applicant notes, "if the amount of data... is large,

it may be broken down into several packets.... Each packet is prepared and then sent

along the bus" (col. 10, lines 47-50). Fung then teaches, "[i]t may take multiple

transactions to complete a non-time critical TMC block request" (col. 10, lines 61-63).

Therefore the Examiner finds that entries (in the TMC) are used by the interface in

"identifying respective packets" as claimed. If the Applicant intends that the entries

enjoy a particular correspondence with the packets, this distinction is not supported in

the claims.

Applicant further argues that Fung "does not disclose retransmission of entries

identifying respective packets; rather, Fung et al. describes retransmission of the entire

transaction that is composed of multiple packets" (p. 9). However, the Examiner finds

that any breakdown of the data into partitions constitutes packets, even if those packets

themselves may themselves may have subpackets. In Fung, the partition is signified by

the "grp" bit: "This bit indicates whether the particular TMC block is linked in a group

with other TMC blocks" (col. 11, lines30-31) and as to its use, "it is the responsibility of

the requesting task to format multiple TMC blocks, one TMC block for each page table

segment. If the data contained within the page table segments is grouped, the

requesting task will set the "grp" bit, word 7, bit 7 to 1, to indicate to the Transaction

Interface 210 that the data in the separate TMC blocks is linked" (col. 17, lines 11-17).

Because of this partitioning of data, Examiner finds that each transaction is a selected

entry and, as Applicant notes Fung "describes the retransmission of the entire

transaction". Whether, as the Applicant further notes, this transaction "is composed of

multiple packets" (p. 9) is not pertinent.

Applicant further argues that Fung "teaches retransmitting the entire transaction

which would include packets for which a reply already has been received". Applicant

relies on Fung's teaching that the interface "will attempt to send the data again" (col. 10,

line 66 – col. 11, line 5, as quoted by Applicant, p. 9). It is not clear that Fung teaches

retransmitting the entire transaction; however, the issue is not pertinent to the

interpretation of Fung used to reject the claims, where the entire transaction is itself a

data partition and hence considered a packet, as detailed supra.

Applicant further argues that "'associating a hardware timer with each

transaction' is imprecise and fails to address the explicit claim limitations that require

each and every packet to have a corresponding entry" (p. 10). However the claims do

not contain this language explicitly. The claims recite "entries identifying respective

packets" and "a waiting bit for a selected one of the entries"; thus the limitations do not

require each and every packet to have a corresponding entry. Regardless, as treated

supra, the Examiner finds that the Fung's TMC transactions, which partition the data,

teach the further limitations of "resetting an acknowledgement waiting bit..." and

"transferring the entries..." as cited passages and treatment supra hopefully make clear.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Clifford H. Knoll whose telephone number is 571-272-

3636. The examiner can normally be reached on M-F 0630-1500.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mark H. Rinehart can be reached on 571-272-3632. The fax phone number

for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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